AKAI

ADDITIONAL SERVICE MANUAL

- This additional manual is for the AP-M77T and the AP-M77. which have been made after July 1984.
- Use this manual together with the AP-M77 Service Manual which has been published previously.

- この追加マニアルは、AP-M77T および AP-M77（'84 7月製造以後）の回路図およびプリント配線図を示します。
- このマニアルの使用に当っては、すでに配布しましたAP-M77のサービスマニアルと一緒に御使用ください。

PARTS LIST
SCHEMATIC DIAGRAM
PC BOARDS

FULL AUTOMATIC PLAYER

MODEL AP-M77T
MODEL AP-M77

ATTENTION

1. When placing an order for parts, be sure to list the parts no. model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because parts number and parts unit supply in the Preliminary Parts List may be partially changed, please use this parts list for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List shows the parts that are considered necessary for repairs. Other parts, such as resistors and capacitors, are shown in the "Common List for Service Parts". Select and order such parts from the "Common List for Service Parts".
2. The Recommended Spare Parts shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not be supplied in principle.
4. How to read list

a) Mechanism Block

2. HEAD BASE BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-1x	BH-T2023A320A	HEAD BASE BLOCK GX-F66R
2-2	HP-H2206A010A	HEAD R/P PR4-8FU C
2-3	ZS-477876	PAN20×03STL CMT
2-4	ZS-536488	BID20×08STL CMT
2-5	ZG-402895	CS ANGLE ADJUST SPRING

SP (Service Parts) Classification

A small "x" indicates the inability to show that particular part in the Photo or Illustration.

This number corresponds with the individual parts index number in that figure

This number corresponds with the Figure Number

b) P.C Board Block

6. SYS. CON. P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
6-1	BA-T2034A070A	PC SYS CON BLK GX-F44R
6-IC1	EI-324536	IC HD14049BP
6-IC2	EI-336801	IC MB8841-564M
6-IC3	EI-331661	IC SN7405N
6-IC4	EI-336725	IC M54527P
6-TR1to4	ET-200985	TR 2SC2603 F,G
6-TR5to28	ET-554657	TR 2SA733A P,Q
6-D1	ED-318292	D SILICON H 1S2473T-77 T26
6-D2to4	ED-308952	D GERMA V 1K34A-LR F07
6-D5to10	ED-318292	D SILICON H 1S2473T-77 T26
6-X1	EI-318384	OSC X'TAL NC-18C 3.579545MHZ

SP (Service Parts) Classification

This reference numbers corresponds with symbol numbers of Schematic Diagrams.

5. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List. It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index.

WARNING

⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT

⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

RECOMMENDED SPARE PARTS LIST

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

NO.		PARTS NO.	DESCRIPTION
1		BM-351155	MOTOR MMI-5P2R
2		BM-351154	MOTOR MMN-5C2R
3		BM-349296	MOTOR MMN-5C2RG
4		BT-349746	⚠ TRANS POWER APT-77-20 [A]
5		BT-351148	⚠ TRANS POWER APT-77-10 [J]
6		BT-351149	⚠ TRANS POWER APT-77-30 [C]
7		BT-351150	⚠ TRANS POWER APT-77-40 [E]
8		BT-351151	⚠ TRANS POWER APT-77-50 [B,S]
9		BT-351147	⚠ TRANS POWER APT-77-70 [U]
10		ED-562386	D GERMA H 1S188AM
11		ED-562397	D GERMA H 1S188FM1
12		ED-337379	D LED NJL1102EH INFRARED
13		ED-337894	D LED SLP444D01 AMBER
14		ED-337892	D LED SLP451D AMBER
15		ED-301911	D SILICON H DS448
16		ED-344280	D SILICON H GMA-01-FY2 F05
17		ED-306724	D SILICON S5277B 100/1.0A
18		ED-322238	D SILICON 1B4B41 100/1.0A
19		ED-346605	D ZENER H HZ7 C2
20	N	EF-300602	⚠ FUSE FST3100 T 250V 0.63A [E,B,S]
21		EI-336761	IC LA6458S
22		EI-201940	IC NJM4558S
23		EI-356462	IC P1045
24		EI-315243	IC TA78005P
25		EI-347758	IC TA78012AP
26		EI-324255	IC TL082CP
27		EI-349634	IC μPC7912H
28		EI-349372	OSC CE CSA4.00MG 4MHZ
29		EM-351174	IND LE SL-4179
30		EO-330255	COIL FIX 1 EL0606SKI 180K
31		EP-351177	SOLENOID 0531PLT 12V
32		ER-318647	⚠ R FUSE ERD2FC S10 1/4W 4R7J
33		ES-347048	SW PUSH SCL101P 1-01-02N
34		ES-349639	SW PUSH SCL101P-R 1-01-02N
35		ES-344473	SW PUSH SCL101T 1-01-02N
36		ES-348463	SW SLIDE 00120297 01-2 [U]
37		ES-349276	SW SLIDE 00230873 2-02-03S
38		ES-336780	SW TACT KHH10902
39		ES-349474	SW TACT KHH10910
40		ET-337378	PHOTO SENSOR NJL7260E
41		ET-344472	PHOTO SENSOR ON1128AK
42		ET-337759	TR FET 2SK246 GR
43	N	ET-330535	TR FET 2SK246 Y,GR
44		ET-308867	TR 2SA1015 O,Y,GR
45		ET-347738	TR 2SA1282A E,F
46		ET-349272	TR 2SC3242A E,F
47		ET-338565	TR 2SD1302 R,S
48		EV-336853	R S-FIX H KVSF807U 3P 103
49		EV-336847	R S-FIX H KVSF807U 3P 502
50	N	EV-341225	R S-FIX H KVSF807U 3P 503
51		EV-336849	R S-FIX H KVSF807V 3P 203
52		EV-344465	R S-FIX H TM8KV2-3S 3P 0.50W 203
53		EV-347946	R S-FIX H TM8KV3-3S 3P 0.3W 503
54		MB-351069	BELT MAIN MOTOR
55		MB-351070	BELT SLIDE MOTOR
56		MB-349221	BUSH GUIDE
57		MB-345351	RUBBER CUSHION
58		MB-349696	SYNCHRO BELT 140M×L3.2
59		TP-351090B	⚠ TABLE SHEET (B)

"NOTE" N: New Parts

SYMBOL FOR DESTINATION

A: AAL (U.S.A)
B: UK (England)
C: CSA (Canada)
E: CEE (Europe)
J : JPN (Japan)
S: SAA (Australia)
U: U/T (Universal Area)

1. PC BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
1-1A	BA-P1035A060D	PC SYSCON BLK AP-M77T-C(U) [U,J,C]
1-1B	BA-P1035A060E	PC SYSCON BLK AP-M77T-C(A)[A]
1-1C	BA-P1035A060F	PC SYSCON BLK AP-M77T-C(E) [E,B,S]

NOTES: PC SYSCON BLK consists of following PC BOARDS.

- AUDIO PC BOARD
- POWER SUPPLY PC BOARD
- SYSTEM CONTROL PC BOARD
- KEY BOARD (A) PC BOARD
- KEY BOARD (B) PC BOARD
- POSITION SENSOR (LED) PC BOARD
- POSITION SENSOR (PTR) PC BOARD
- LIMIT PC BOARD
- PROGRAM IND PC BOARD
- RESET PC BOARD
- IND PC BOARD
- SLIDE PC BOARD
- TRACKING PC BOARD
- IC (A) PC BOARD
- IC (B) PC BOARD
- IC (C) PC BOARD

2. SYSTEM CONTROL PC BOARD

REF. NO.	PARTS NO.	DESCRIPTION
2-IC1	EI-336761	IC LA6458S
2-IC2	EI-344461	IC TA75393S
2-IC3	EI-324255	IC TL082CP
2-IC4,5	EI-344461	IC TA75393S
2-IC6	EI-336761	IC LA6458S
2-IC7	EI-356462	IC P1045
2-TR1	ET-330225	TR 2SC1815 BL
2-TR2	ET-308867	TR 2SA1015 O,Y,GR
2-TR3to6	ET-330225	TR 2SC1815 BL
2-TR7	ET-349272	⚠ TR 2SC3242A E,F
2-TR8	ET-347738	⚠ TR 2SA1282A E,F
2-TR9	ET-308867	TR 2SA1015 O,Y,GR
2-TR10	ET-330225	TR 2SC1815 BL
2-TR11	ET-308867	TR 2SA1015 O,Y,GR
2-TR12,13	ET-338565	TR 2SD1302 R,S
2-TR14to17	ET-330225	TR 2SC1815 BL
2-TR18	ET-337759	TR FET 2SK246 GR
2-TR19	ET-330225	TR 2SC1815 BL
2-TR20	ET-308867	TR 2SA1015 O,Y,GR
2-TR21	ET-349272	⚠ TR 2SC3242A E,F
2-TR22	ET-347738	⚠ TR 2SA1282A E,F
2-TR23	ET-330225	TR 2SC1815 BL
2-TR24	ET-347738	TR 2SA1282A E,F
2-TR25	ET-349272	TR 2SC3242A E,F
2-TR26	ET-308867	TR 2SA1015 O,Y,GR
2-TR27,28	ET-330225	TR 2SC1815 BL
2-TR29	ET-349272	TR 2SC3242A E,F
2-TR30	ET-330225	TR 2SC1815 BL
2-TR31	ET-338565	TR 2SD1302 R,S
2-TR32	ET-330225	TR 2SC1815 BL
2-TR33	ET-338565	TR 2SD1302 R,S
2-TR34to38	ET-330225	TR 2SC1815 BL
2-TR39	ET-338565	TR 2SD1302 R,S
2-TR40	ET-338565	TR 2SD1302 R,S
2-D1to8	ED-301911	D SILICON H DS448
2-D9	ED-562397	D GERMA H 1S188FM1
2-D10	ED-562386	D GERMA H 1S188AM
2-D11to14	ED-301911	D SILICON H DS448
2-D15,16	ED-306724	D SILICON S5277B 100/1.0A
2-D17to20	ED-301911	D SILICON H DS448
2-D21	ED-346605	D ZENER H HZ7 C2
2-D22,23	ED-562386	D GERMA H 1S188AM
2-D24	ED-301911	D SILICON H DS448
2-VR1	EV-336853	R S-FIX H KVSF807U 3P 103
2-VR2,3	EV-347946	R S-FIX H TM8KV3-3S 3P 0.3W 503
2-VR4,5	EV-341225	R S-FIX H KVSF807U 3P 503
2-VR6	EV-336853	R S-FIX H KVSF807U 3P 103
2-VR7	EV-336847	R S-FIX H KVSF807U 3P 502
2-L1	EO-345992	COIL FIX 1 EL0606RR T05 680J
2-X1	EI-349372	OSC CE CSA4.00MG 4MHZ
2-SR1	EH-351158	COMP R EXB-P84 223K
2-R5,6	ER-696306	R MF H 1/4W 2001F
2-R86	ER-265048	R OMF H 2W 271J

3. AUDIO PC BOARD

REF. NO.	PARTS NO.	DESCRIPTION
3-IC1	EI-201940	IC NJM4558S
3-TR1	ET-330535	TR FET 2SK246 Y,GR
3-TR2,3	ET-338565	TR 2SD1302 R,S
3-VR1	EV-344465	R S-FIX H TM8KV2-3S 3P 0.50W 203
3-VR2,3	EV-336849	R S-FIX H KVSF807V 3P 203

4. KEY BOARD (A) PC BOARD

REF. NO.	PARTS NO.	DESCRIPTION
4-D1to11	ED-344280	D SILICON H GMA-01-FY2 F05
4-SW1to11	ES-336780	SW TACT KHH10902

5. KEY BOARD (B) PC BOARD

REF. NO.	PARTS NO.	DESCRIPTION
5-D1to5	ED-344280	D SILICON H GMA-01-FY2 F05
5-SW1to4	ES-336780	SW TACT KHH10902
5-SW5	ES-349474	SW TACT KHH10910

6. POSITION SENSOR (LED) PC BOARD

REF. NO.	PARTS NO.	DESCRIPTION
6-D1,2	ED-337379	D LED NJL1102EH INFRARED

7. POSITION SENSOR (PTR) PC BOARD

REF. NO.	PARTS NO.	DESCRIPTION
7-PH1,2	ET-337378	PHOTO SENSOR NJL7260E

8. LIMIT PC BOARD

REF. NO.	PARTS NO.	DESCRIPTION
8-SW1,2	ES-347048	SW PUSH SCL101P 1-01-02N

9. PROGRAM IND PC BOARD

REF. NO.	PARTS NO.	DESCRIPTION
9-IND1	EM-351174	IND LE SL-4179

10. RESET PC BOARD

REF. NO.	PARTS NO.	DESCRIPTION
10-SW1	ES-344473	SW PUSH SCL101T 1-01-02N
10-C1	EC-300193	C EC V F05 NP SM 100M 16DC

11. IND PC BOARD

REF. NO.	PARTS NO.	DESCRIPTION
11-D1	ED-337894	D LED SLP444D01 AMBER
11-D2,3	ED-337892	D LED SLP451D AMBER

12. SLIDE PC BOARD

REF. NO.	PARTS NO.	DESCRIPTION
12-SW1,2	ES-349276	SW SLIDE 00230873 2-02-03S

13. TRACKING PC BOARD

REF. NO.	PARTS NO.	DESCRIPTION
13-PH1	ET-344472	PHOTO SENSOR ON1128AK

14. IC (A) PC BOARD

REF. NO.	PARTS NO.	DESCRIPTION
14-IC1	EI-347758	⚠ IC TA78012AP

15. IC (B) PC BOARD

REF. NO.	PARTS NO.	DESCRIPTION
15-IC1	EI-315243	⚠ IC TA78005P

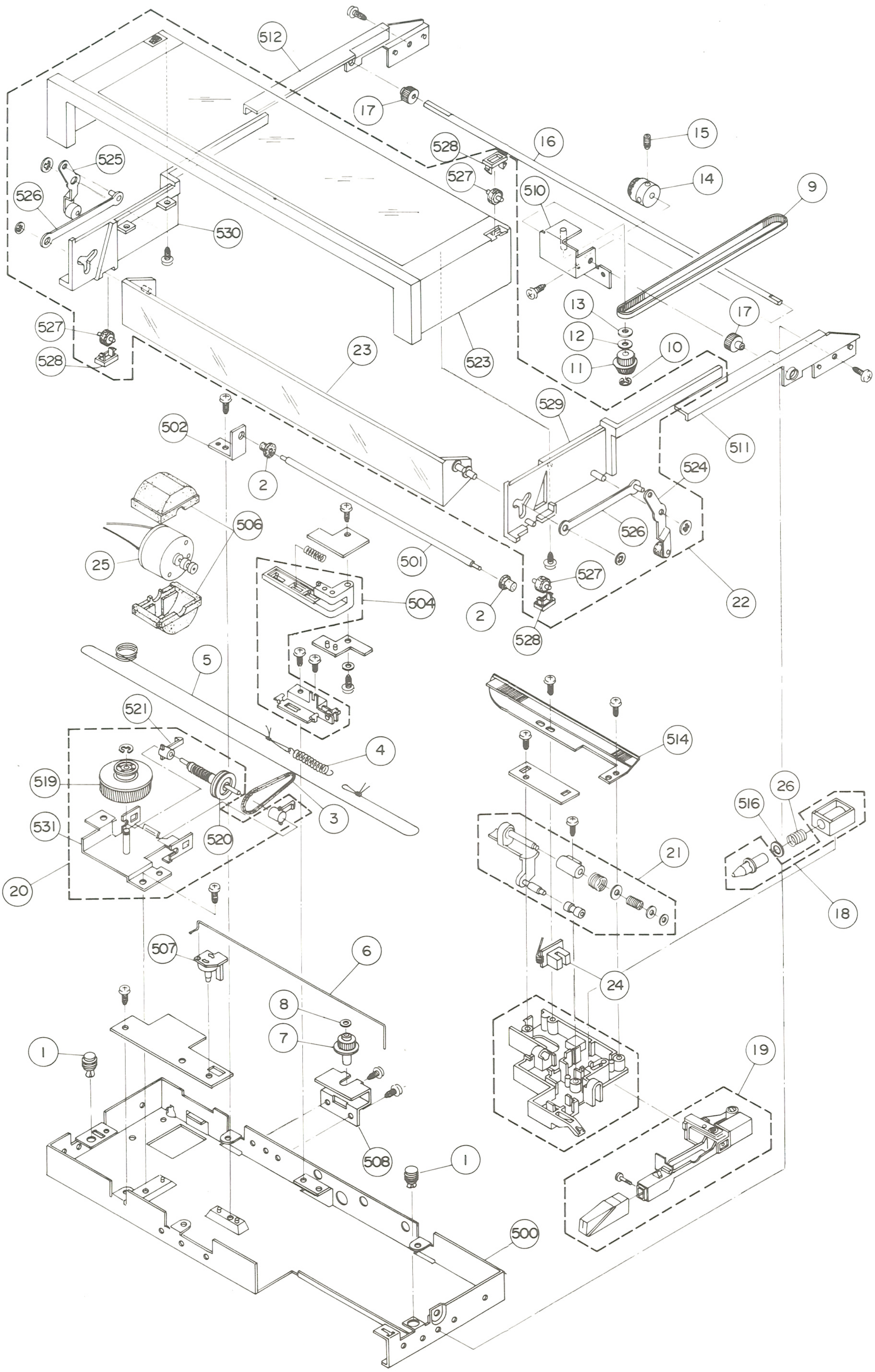
16. IC (C) PC BOARD

REF. NO.	PARTS NO.	DESCRIPTION
16-IC1	EI-349634	⚠ IC μPC7912H

17. POWER SUPPLY PC BOARD

REF. NO.	PARTS NO.	DESCRIPTION
17-D1	ED-322238	⚠ D SILICON 1B4B41 100/1.0A
17-FR1	ER-318647	⚠ R FUSE ERD2FC S10 1/4W 4R7J

ASSEMBLY BLOCK (1)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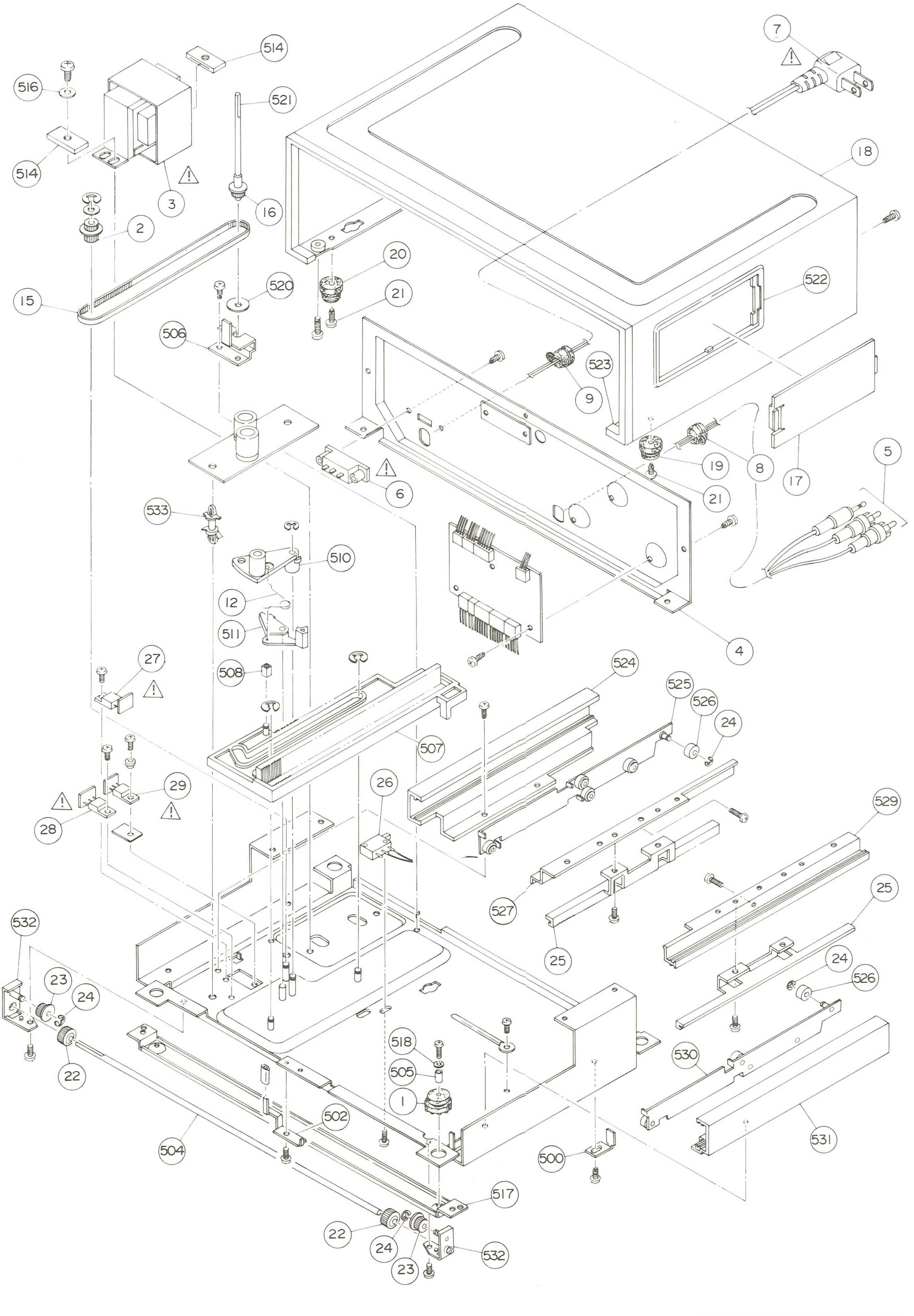
18. ASSEMBLY BLOCK (1)

REF. NO.	PARTS NO.	DESCRIPTION
	CHASSIS UPPER BLOCK	
18-1	MR-308836	PULLEY
18-2	MB-349221	BUSH GUIDE
18-3	MB-344538	BELT 1.2×D26.0CRHS60
18-4	ZG-313046	SP T1-05.0/0.55-28.0 T1-159
18-5	EZ-349232	STRING WIRE
18-6	EZ-349230	WIRE REJECT
18-7	MI-351053	GEAR PULLEY (1)
18-8	ZW-620201	WASHER (NYLON) D4.6×13×0.8T
18-9	MB-349696	SYNCHRO BELT 140M×L3.2
18-10	ZW-357164	RING E230SUP CMT
18-11	MI-351055	GEAR PULLEY (3)
18-12	ZW-324147	PW31×130×100NYL
18-13	ZW-322525	PW41×070×020PBR
18-14	MI-351056	GEAR DRIVE (1)
18-15	ZS-356815	6SET30×060SCM PKR HP
18-16	MS-351035	SHAFT DRIVE (1)
18-17	MI-351063	GEAR DRIVE (2)
18-18	EP-351177	SOLENOID 0531PLT 12V[SL901]
18-19	TP-351178	TONE ARM W/CARTRIDGE AP-M77
18-20	TP-P1035A160A	CHASSIS GEAR BLK AP-M77-C
18-21	TP-P1035A170A	ARM ELEVATION BLK AP-M77-C
	DUST COVER BLOCK	
18-22	BC-P1035A100A	DUST COVER BLK AP-M77-C
18-23	SP-351082	COVER FRONT
18-24	ET-344472	PHOTO SENSOR ON1128AK [PH-1]
	MOTOR ARM BLOCK	
18-25	BM-349296	MOTOR MMN-5C2RG [M901]
18-26	ZG-351560	SP PUSH PLUNGER

NOTE: Parts listed in 1 to 26 on the exploded view and list are normaly stocked for replacement purpose. The remaining parts shown in this manual are not normaly stocked, because they are seldom required for routine service.

ASSEMBLY BLOCK (2)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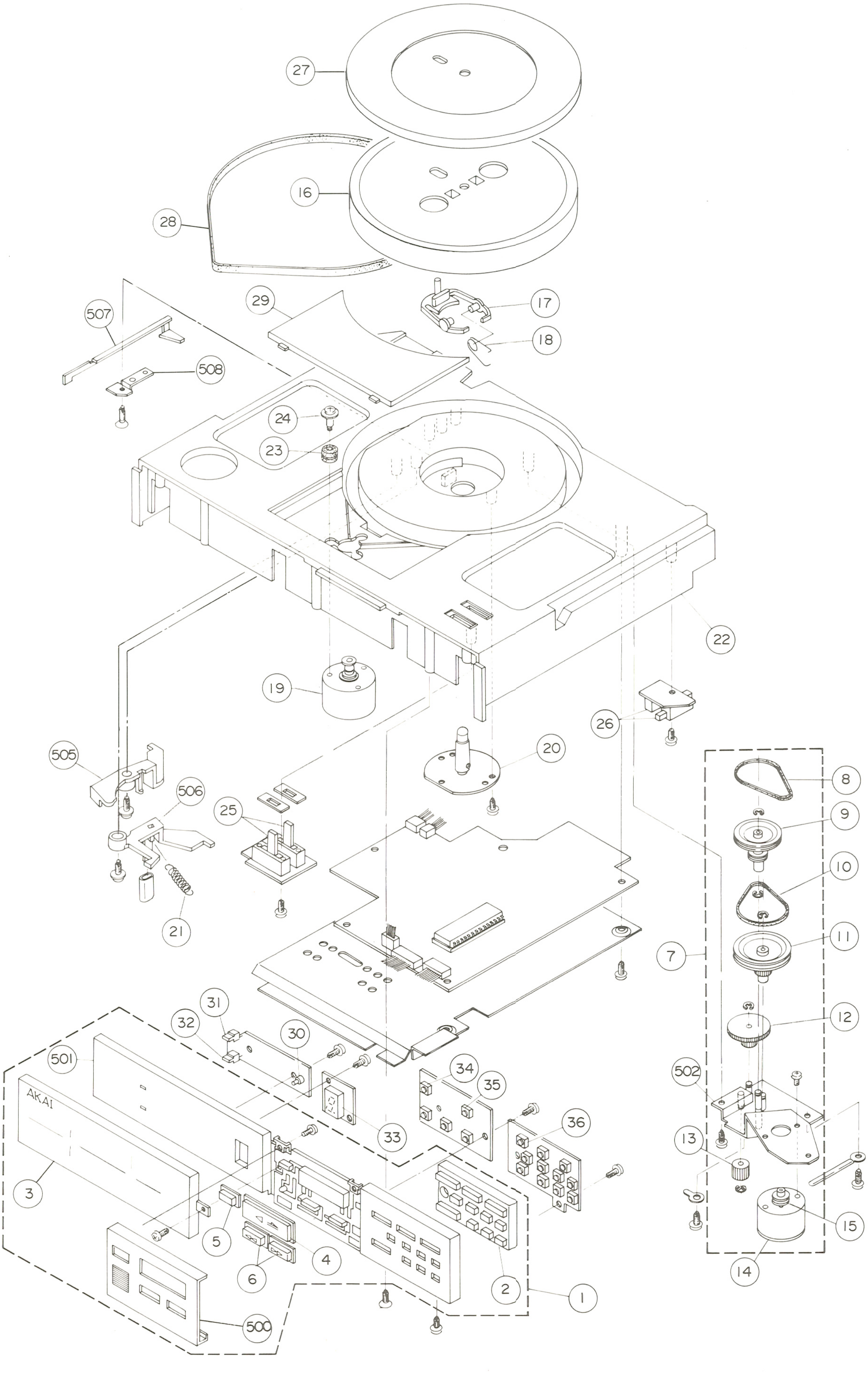
19. ASSEMBLY BLOCK (2)

REF. NO.	PARTS NO.	DESCRIPTION
	ASSEMBLY BLOCK	
19-1	TP-351543	INSULATOR
19-2	MI-351054	GEAR PULLEY
19-3A	BT-351147	⚠ TRANS POWER APT-77-70 [U][T901]
19-3B	BT-351148	⚠ TRANS POWER APT-77-10 [J][T901]
19-3C	BT-351149	⚠ TRANS POWER APT-77-30 [C][T901]
19-3D	BT-349746	⚠ TRANS POWER APT-77-20 [A][T901]
19-3E	BT-351150	⚠ TRANS POWER APT-77-40 [E][T901]
19-3F	BT-351151	⚠ TRANS POWER APT-77-50 [B,S][T901]
19-4A	SP-351038A	PANEL REAR (A) [U,J,C,A]
19-4B	SP-351038B	PANEL REAR (B) [E,B,S]
19-5	EW-353156	CORD P1035A UL 3P AUDIO
19-6	ES-348463	⚠ SW SLIDE 00120297 01-2 [U][SW901]
19-7A	EW-349550	⚠ AC CORD 2CORES KP-224, VFF PL-7 U/T [U]
19-7B	EW-349549	⚠ AC CORD 2CORES KP-224, VFF PL-7 J [J]
19-7C	EW-207742	AC CORD 2 CORES VM-0238, SPT-1 UC [A]
19-7D	EW-352237	⚠ AC CORD 2 CORES KP-8, SPT-2 UC [C]
19-8	EZ-631945	STRAIN RELIEF SR-4N-4
19-9	EZ-631945	STRAIN RELIEF SR-4N-4 [U,J,C,A]
19-10x	EJ-301513	⚠ SOCKET INLET S-I6453 E 2P [E,B,S][J901]
19-11x	TA-328841	⚠ COVER 2P INLET [E,B,S]
19-12	ZG-351079	SP DISC
19-13x	EF-300602	⚠ FUSE FST3100 T 250V 0.63A [E,B,S][F1]
19-14x	EF-300602	⚠ FUSE FST3100 T 250V 0.63A [E,B,S][F2]
19-15	MB-349696	SYNCHRO BELT 140M×L3.2
19-16	MI-351053	GEAR PULLEY (1)
19-17	TP-349500B	PLATE STYLUS CHANGE-B
19-18A	BC-P1045A120C	COVER UPPER BLK AP-M77T-CB(U) [EXCEPT A]
19-18B	BC-P1045A120D	COVER UPPER BLK AP-M77T-CB(A) [A]
19-19	SA-B351636X4	RUBBER FOOT (B) (R) PART
19-20	SA-B351636X3	RUBBER FOOT (B) (L) PART
19-21	ZS-351782	SCREW (B)
19-22	MI-351063	GEAR DRIVE (2)
19-23	MI-351205	GEAR FRONT
19-24	ZW-357164	RING E230SUP CMT
19-25	MZ-351194	RACK
19-26	ES-349639	SW PUSH SCL101P-R 1-01-02N
	IC (B) PC BOARD	
19-27	EI-315243	⚠ IC TA78005P [IC1]
	IC (A) PC BOARD	
19-28	EI-347758	⚠ IC TA78012AP [IC1]
	IC (C) PC BOARD	
19-29	EI-349634	⚠ IC μPC7912H [IC1]

NOTE: Parts listed in 1 to 29 on the exploded view and list are normaly stocked for replacement purpose. The remaining parts shown in this manual are not normaly stocked, because they are seldom required for routine service.

FINAL ASSEMBLY BLOCK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20. FINAL ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
	CABINET BLOCK	
20-1A	BD-P1045A030C	PANEL FRONT BLK AP-M77T-CB(U) [U,J,C,B,S]
20-1B	BD-P1045A030D	PANEL FRONT BLK AP-M77T-CB(A) [A]
20-2A	SK-351088D	KNOB PROGRAM (A)-B [EXCEPT A]
20-2B	SK-351088E	KNOB PROGRAM (B)-B [A]
20-3	SE-351040	WINDOW LED
20-4	SK-351057B	KNOB START-B
20-5	SK-351058B	KNOB DOOR-B
20-6	SK-349555B	KNOB FORWARD-B
20-7	MZ-P1035A040A	GEAR BLK AP-M77-C
20-8	MB-351070	BELT SLIDE MOTOR
20-9	MR-351541	PULLEY LOADING (1)
20-10	MB-351070	BELT SLIDE MOTOR
20-11	MR-351542	PULLEY LOADING (2)
20-12	TC-690952	MIDDLE GEAR
20-13	MI-351078	GEAR (3)
20-14	BM-351154	MOTOR MMN-5C2R [M902]
20-15	MR-345182	PULLEY MOTOR
20-16	TP-351091	PLATTER
20-17	TP-351030	CRANK DISK
20-18	ZG-351064	SP CRANK DISK
20-19	BM-351155	MOTOR MMI-5P2R [M903]
20-20	TP-349346	SPINDLE ASSY
20-21	ZG-313026	SP T1-05.0/0.32-16.0 T1-139
20-22	BC-351062C	CABINET-B
20-23	MB-345351	RUBBER CUSHION
20-24	ZS-350767	SCREW
	SLIDE PC BOARD	
20-25	ES-349276	SW SLIDE 00230873 2-02-03S [SW-1,2]
	LIMIT PC BOARD	
20-26	ES-347048	SW PUSH SCL101P 1-01-02N [SW-1,2]
	FINAL ASSEMBLY BLOCK	
20-27	TP-351090B	TABLE SHEET (B)
20-28	MB-351069	BELT MAIN MOTOR
20-29	TP-351042	COVER MAIN MOTOR
	IND PC BOARD	
20-30	ED-337894	D LED SLP444D01 AMBER [D1]
20-31	ED-337892	D LED SLP451D AMBER [D2]
20-32	ED-337892	D LED SLP451D AMBER [D3]
	PROGRAM IND PC BOARD	
20-33	EM-351174	IND LE SL-4179 [IND1]
	KEY BOARD (B) PC BOARD	
20-34	ES-336780	SW TACT KHH10902 [SW1–SW4]
20-35	ES-349474	SW TACT KHH10910 [SW5]
	KEY BOARD (A) PC BOARD	
20-36	ES-336780	SW TACT KHH10902 [SW1–SW11]

NOTE: Parts listed in 1 to 36 on the exploded view and list are normaly stocked for replacement purpose. The remaining parts shown in this manual are not normaly stocked, because they are seldom required for routine service.

INDEX

PARTS NO.	REF. NO.
BA-P1035A060D	1-1A
BA-P1035A060E	1-1B
BA-P1035A060F	1-1C
BC-P1035A100A	18-22
BC-P1045A120C	19-18A
BC-P1045A120D	19-18B
BC-351062C	20-22
BD-P1045A030C	20-1A
BD-P1045A030D	20-1B
BM-349296	18-25
BM-351154	20-14
BM-351155	20-19
BT-349746	19-30
BT-351147	19-3A
BT-351148	19-3B
BT-351149	19-3C
BT-351150	19-3E
BT-351151	19-3F
EC-300193	10-C1
ED-301911	2-D1
ED-301911	2-D2
ED-301911	2-D3
ED-301911	2-D4
ED-301911	2-D5
ED-301911	2-D6
ED-301911	2-D7
ED-301911	2-D8
ED-301911	2-D11
ED-301911	2-D12
ED-301911	2-D13
ED-301911	2-D14
ED-301911	2-D17
ED-301911	2-D18
ED-301911	2-D19
ED-301911	2-D20
ED-301911	2-D24
ED-306724	2-D15
ED-306724	2-D16
ED-322238	17-D1
ED-337379	6-D1
ED-337379	6-D2
ED-337892	11-D2
ED-337892	11-D3
ED-337892	20-31
ED-337892	20-32
ED-337894	11-D1
ED-337894	20-30
ED-344280	4-D1
ED-344280	4-D2
ED-344280	4-D3
ED-344280	4-D4
ED-344280	4-D5
ED-344280	4-D6
ED-344280	4-D7
ED-344280	4-D8
ED-344280	4-D9
ED-344280	4-D10
ED-344280	4-D11
ED-344280	5-D1
ED-344280	5-D2
ED-344280	5-D3
ED-344280	5-D4
ED-344280	5-D5
ED-346605	2-D21
ED-562386	2-D10
ED-562386	2-D22
ED-562386	2-D23
ED-562397	2-D9
EF-300602	19-14x
EF-300602	19-13x
EH-351158	2-SR1
EI-201940	3-IC1
EI-315243	15-IC1
EI-315243	19-27
EI-324255	2-IC3
EI-336761	2-IC1
EI-336761	2-IC6
EI-344461	2-IC2
EI-344461	2-IC4
EI-344461	2-IC5
EI-347758	14-IC1
EI-347758	19-28
EI-349372	2-X1
EI-349634	16-IC1
EI-349634	19-29
EI-356462	2-IC7
EJ-301513	19-10x
EM-351174	9-IND1
EM-351174	20-33
EO-345992	2-L1
EP-351177	18-18
ER-265048	2-R86
ER-318647	17-FR1
ER-696306	2-R5
ER-696306	2-R6
ES-336780	4-SW1
ES-336780	4-SW2
ES-336780	4-SW3
ES-336780	4-SW4
ES-336780	4-SW5
ES-336780	4-SW6
ES-336780	4-SW7
ES-336780	4-SW8
ES-336780	4-SW9
ES-336780	4-SW10
ES-336780	4-SW11
ES-336780	5-SW1
ES-336780	5-SW2
ES-336780	5-SW3
ES-336780	5-SW4
ES-336780	20-34
ES-336780	20-36
ES-344473	10-SW1
ES-347048	8-SW1
ES-347048	8-SW2
ES-347048	20-26
ES-348463	19-6
ES-349276	12-SW1
ES-349276	12-SW2
ES-349276	20-25
ES-349474	5-SW5
ES-349474	20-35
ES-349639	19-26
ET-308867	2-TR2
ET-308867	2-TR9
ET-308867	2-TR11
ET-308867	2-TR20
ET-308867	2-TR26
ET-330225	2-TR1
ET-330225	2-TR3
ET-330225	2-TR4
ET-330225	2-TR4
ET-330225	2-TR5
ET-330225	2-TR6
ET-330225	2-TR10
ET-330225	2-TR14
ET-330225	2-TR15
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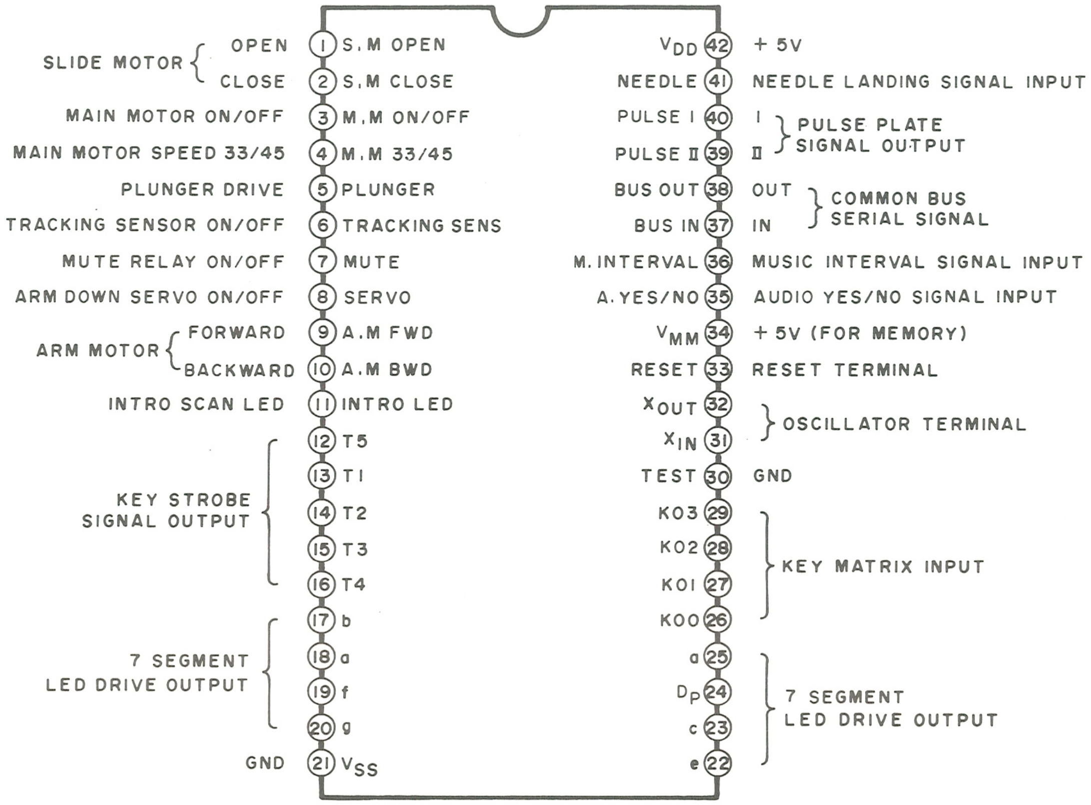
ET-330225	2-TR19
ET-330225	2-TR23
ET-330225	2-TR27
ET-330225	2-TR28
ET-330225	2-TR30
ET-330225	2-TR32
ET-330225	2-TR34
ET-330225	2-TR35
ET-330225	2-TR36
ET-330225	2-TR37
ET-330225	2-TR38
ET-330535	3-TR1
ET-337378	7-PH1
ET-337378	7-PH2
ET-337759	2-TR18
ET-338565	2-TR12
ET-338565	2-TR13
ET-338565	2-TR31
ET-338565	2-TR33
ET-338565	2-TR39
ET-338565	2-TR40
ET-338565	3-TR2
ET-338565	3-TR3
ET-344472	13-PH1
ET-344472	18-24
ET-347738	2-TR8
ET-347738	2-TR22
ET-347738	2-TR24
ET-349272	2-TR7
ET-349272	2-TR21
ET-349272	2-TR25
ET-349272	2-TR29
EV-336847	2-VR7
EV-336849	3-VR2
EV-336849	3-VR3
EV-336853	2-VR1
EV-336853	2-VR6
EV-341225	2-VR4
EV-341225	2-VR5
EV-344465	3-VR1
EV-347946	2-VR2
EV-347946	2-VR3
EW-207742	19-7C
EW-349549	19-7B
EW-349550	19-7A
EW-352237	19-7D
EW-353156	19-5
EZ-349230	18-6
EZ-349232	18-5
EZ-631945	19-9
EZ-631945	19-8
MB-344538	18-3
MB-345351	20-23
MB-349221	18-2
MB-349696	18-9
MB-349696	19-15
MB-351069	20-28
MB-351070	20-10
MB-351070	20-8
MI-351053	18-7
MI-351053	19-16
MI-351054	19-2
MI-351055	18-11
MI-351056	18-14
MI-351063	18-17
MI-351063	19-22
MI-351078	20-13
MI-351205	19-23
MR-308836	18-1
MR-345182	20-15
MR-351541	20-9
MR-351542	20-11
MS-351035	18-16
MZ-P1035A040A	20-7
MZ-351194	19-25
SA-B351636X3	19-20
SA-B351636X4	19-19
SE-351040	20-3
SK-349555B	20-6
SK-351057B	20-4
SK-351058B	20-5
SK-351088D	20-2A
SK-351088E	20-2B
SP-351038A	19-4A
SP-351038B	19-4B
SP-351082	18-23
TA-328841	19-11x
TC-690952	20-12
TP-P1035A160A	18-20
TP-P1035A170A	18-21
TP-349346	20-20
TP-349500B	19-17
TP-351030	20-17
TP-351042	20-29
TP-351090B	20-27
TP-351091	20-16
TP-351178	18-19
TP-351543	19-1
ZG-313026	20-21
ZG-313046	18-4
ZG-351064	20-18
ZG-351079	19-12
ZG-351560	18-26
ZS-350767	20-24
ZS-351782	19-21
ZS-356815	18-15
ZW-322525	18-13
ZW-324147	18-12
ZW-357164	18-10
ZW-357164	19-24
ZW-620201	18-8

P1035/P1035A/P1045

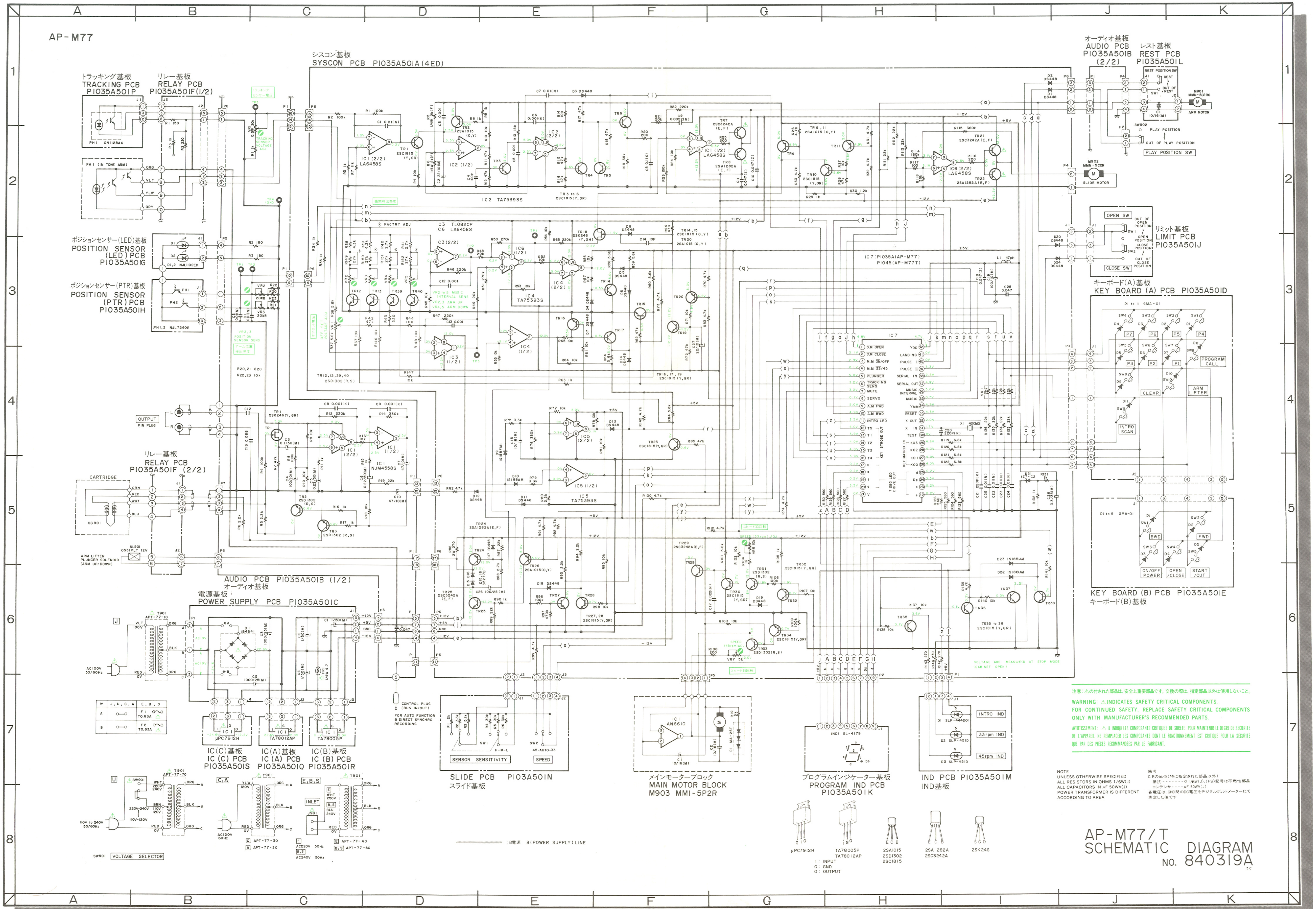

SLIDE MOTOR
OPEN
CLOSE
MAIN MOTOR ON/OFF
MAIN MOTOR SPEED 33/45
PLUNGER DRIVE
TRACKING SENSOR ON/OFF
MUTE RELAY ON/OFF
ARM DOWN SERVO ON/OFF
ARM MOTOR
FORWARD
BACKWARD
INTRO SCAN LED
KEY STROBE SIGNAL OUTPUT
7 SEGMENT LED DRIVE OUTPUT
GND
① S.M OPEN
② S.M CLOSE
③ M.M ON/OFF
④ M.M 33/45
⑤ PLUNGER
⑥ TRACKING SENS
⑦ MUTE
⑧ SERVO
⑨ A.M FWD
⑩ A.M BWD
⑪ INTRO LED
⑫ T5
⑬ T1
⑭ T2
⑮ T3
⑯ T4
⑰ b
⑱ a
⑲ f
⑳ g
㉑ V_{SS}
V_{DD} ㊷
NEEDLE ㊶
PULSE I ㊵
PULSE II ㊴
BUS OUT ㊳
BUS IN ㊲
M.INTERVAL ㊱
A.YES/NO ㉟
V_{MM} ㉞
RESET ㉝
X_{OUT} ㉜
X_{IN} ㉛
TEST ㉚
KO3 ㉙
KO2 ㉘
KO1 ㉗
KO0 ㉖
a ㉕
Dp ㉔
c ㉓
e ㉒
+ 5V
NEEDLE LANDING SIGNAL INPUT
I
II
PULSE PLATE SIGNAL OUTPUT
OUT
IN
COMMON BUS SERIAL SIGNAL
MUSIC INTERVAL SIGNAL INPUT
AUDIO YES/NO SIGNAL INPUT
+ 5V (FOR MEMORY)
RESET TERMINAL
OSCILLATOR TERMINAL
GND
KEY MATRIX INPUT
7 SEGMENT LED DRIVE OUTPUT

TERMINAL DESCRIPTION OF IC P1035, P1035A, P1045 (4 Bit Micro Computer)

Pin No.	Symbol	Description
1	$\overline{\text{SM OPEN}}$	Slide Motor (M902) OPEN Drive output. SM starts turning and opens the cabinet at "L".
2	$\overline{\text{SM CLOSE}}$	Slide Motor (M902) CLOSE Drive output. SM starts turning and closes the cabinet at "L"
3	MM $\overline{\text{ON}}$/OFF	Main Motor (M903) ON/OFF Drive output. MM is ON at "L", OFF at "H".
4	$\overline{33}$/45	Main Motor Speed (33/45) Selection output. 33 rpm at "L", 45 rpm at "H".
5	PLUNGER	Arm Lifter Plunger (SL901) Drive output. Active at "L".

Pin No.	Symbol	Description
6	$\overline{\text{TRACKING SENS}}$	Tracking Sensor ON/OFF Control output. ON at "L", OFF at "H".
7	MUTE	Mute ON/OFF Control output. ON at "H", OFF at "L".
8	SERVO	Arm Down Servo Drive output. Servo is ON at "H", OFF at "L".
9	$\overline{\text{AM FWD}}$	Arm Motor (M901) Forward Drive output. AM turns forward (Tone arm to the left) at "L".
10	$\overline{\text{AM BWD}}$	Arm Motor (M901) Backward Drive output. AM turns backward (Tone arm to the right) at "L".
11	$\overline{\text{INTRO LED}}$	Intro Scan LED Drive output, lit at "L".
12	T5	Key Strobe Signal output terminal for the mechanical switches such as CLOSE, OPEN, PLAY & REST switches.
13	T1	Key Strobe Signal output terminal for the tact switches such as START/CUT, OPEN/CLOSE, POWER ON/OFF, & INTRO SCAN switches.
14	T2	Key Strobe Signal output terminal for the tact switches such as FWD, BWD, CUE (ARM LIFTER) & CLEAR switches.
15	T3	Key Strobe Signal output terminal for the tact switches such as PROGRAM CALL, 1, 2, & 3 switches.
16	T4	Key Strobe Signal output terminal for the tact switches such as 4, 5, 6 & 7 switches.
17	b	7 Segment LED Drive output, lit at "L".
18	a	
19	f	
20	g	
21	Vss	Connect to GND.
22	e	7 Segment LED Drive output, lit at "L".
23	c	
24	Dp	
25	d	
26	K00	Key Matrix Input terminal for the switches switch as 4, PROGRAM CALL, FWD, START/CLOSE & CLOSE.
27	K01	Key Matrix Input terminal for the switches such as 1, 5, CUE (ARM LIFTER), OPEN/CLOSE & OPEN.
28	K02	Key Matrix Input terminal for the switches such as 2, 6, BWD, POWER (ON/OFF) & PLAY.
29	K03	Key Matrix Input terminal for the switches, such as 3, 7, CLEAR, INTRO SCAN & REST.
30	TEST	Connect to GND.
31	X IN	Crystal Oscillator Terminal.
32	X OUT	Crystal Oscillator Terminal.
33	$\overline{\text{RESET}}$	Reset Signal Input Terminal, Reset at "L".
34	V_{MM}	Connected to +5V for memory.
35	MUSIC	Music(Audio) YES/NO Signal Input terminal.
36	MI	Music Internal Signal Input terminal.
37	BUS IN	Common Bus Serial Signal Input terminal.
38	BUS OUT	Common Bus Serial Signal Output terminal.
39	PULSE II	Pulse Plate Slave Signal Input terminal for Tone Arm Location Sensing.
40	PULSE I	Pulse Plate Master Signal Input terminal for Tone Arm Location Sensing.
41	NEEDLE	Needle Landing Signal Input terminal for the detection of needle landing.
42	V_{DD}	Power Supply terminal (+5V).

AP-M77


トラッキング基板
TRACKING PCB
P1035A501P
リレー基板
RELAY PCB
P1035A501F(1/2)
シスコン基板
SYSCON PCB P1035A501A(4ED)
オーディオ基板
AUDIO PCB
P1035A501B
(2/2)
レスト基板
REST PCB
P1035A501L
ARM MOTOR
PLAY POSITION SW
SLIDE MOTOR
ポジションセンサー(LED)基板
POSITION SENSOR
(LED) PCB
P1035A501G
ポジションセンサー(PTR)基板
POSITION SENSOR
(PTR) PCB
P1035A501H
リミット基板
LIMIT PCB
P1035A501J
OPEN SW
CLOSE SW
キーボード(A)基板
KEY BOARD (A) PCB P1035A501D
IC7 : P1035A(AP-M77)
P1045(AP-M77T)
IC2 TA75393S
IC3 TL082CP
IC6 LA6458S
OUTPUT
PIN PLUG
リレー基板
RELAY PCB
P1035A501F (2/2)
CARTRIDGE
CG901
ARM LIFTER
PLUNGER SOLENOID
(ARM UP/DOWN)
AUDIO PCB P1035A501B (1/2)
オーディオ基板
電源基板
POWER SUPPLY PCB P1035A501C
AC100V
50/60Hz
IC(C)基板
IC (C) PCB
P1035A501S
IC(A)基板
IC (A) PCB
P1035A501Q
IC(B)基板
IC (B) PCB
P1035A501R
μPC7912H
TA78012AP
TA78005P
SW901 VOLTAGE SELECTOR
110V to 240V
50/60Hz
AC120V
60Hz
INLET
CONTROL PLUG
(BUS IN/OUT)
FOR AUTO FUNCTION
& DIRECT SYNCHRO
RECORDING
SLIDE PCB P103A501N
スライド基板
SENSOR SENSITIVITY
SPEED
メインモーターブロック
MAIN MOTOR BLOCK
M903 MMI-5P2R
AN6610
プログラムインジケーター基板
PROGRAM IND PCB
P1035A501K
IND PCB P1035A501M
IND基板
INTRO IND
33rpm IND
45rpm IND
KEY BOARD (B) PCB P1035A501E
キーボード(B)基板
ON/OFF POWER
OPEN /CLOSE
START /CUT
BWD
FWD
INTRO SCAN
CLEAR
ARM LIFTER
PROGRAM CALL
VOLTAGE ARE MEASURED AT STOP MODE
(CABINET OPEN)
: B(POWER SUPPLY) LINE
μPC7912H
TA78005P
TA78012AP
2SA1015
2SD1302
2SC1815
2SA1282A
2SC3242A
2SK246
I INPUT
G GND
O OUTPUT

注意：⚠の付された部品は、安全上重要部品です。交換の際は、指定部品以外は使用しないこと。

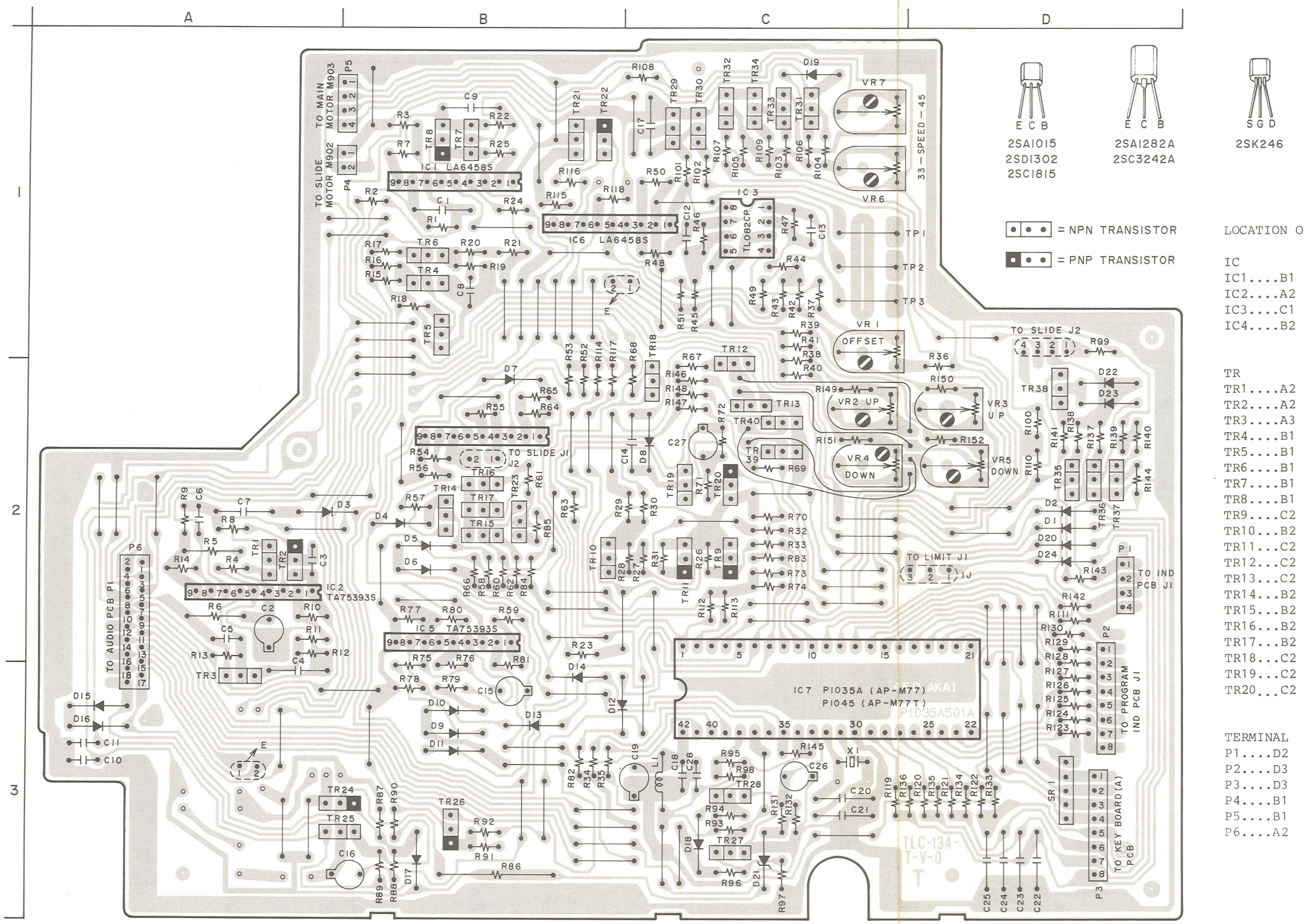
WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS.
FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50WV(J)
POWER TRANSFORMER IS DIFFERENT
ACCORDING TO AREA

備考
C.Rの単位（特に指定された部品以外）
抵抗……………Ω1/6W(J).（FS）記号は不燃性部品
コンデンサ………μF 50WV(J)
各電圧は、GND間のDC電圧をデジタルボルトメーターにて測定した値です

AP-M77/T
SCHEMATIC DIAGRAM
NO. 840319A
3C


A
B
C
D
1
2
3
TO MAIN MOTOR M903
TO SLIDE MOTOR M902
P5
P4
IC1 LA6458S
IC6 LA6458S
IC3 TL082CP
VR7
VR6
33 - SPEED - 45
TP1
TP2
TP3
VR1 OFFSET
TO SLIDE J2
VR2 UP
VR3 UP
VR4 DOWN
VR5 DOWN
TO SLIDE J1
J2
IC2 TA75393S
IC5 TA75393S
TO AUDIO PCB P1
P6
TO LIMIT J1
J1
P1
TO IND PCB J1
P2
TO PROGRAM IND PCB J1
IC7 P1035A (AP-M77)
P1045 (AP-M77T)
AKAI
P1035A501A
X1
SR1
TO KEY BOARD (A) PCB
P3
TLC-134-T-V-0
T

SYSTEM CONTROL PCB P1035A501A (4ED)

E C B
2SA1015
2SD1302
2SC1815
E C B
2SA1282A
2SC3242A
S G D
2SK246

[• • •] = NPN TRANSISTOR

[■ • •] = PNP TRANSISTOR

LOCATION OF COMPONENTS

IC

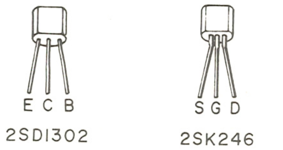
IC1....B1
IC2....A2
IC3....C1
IC4....B2
IC5....B2
IC6....B1
IC7....C3

TR

TR1....A2
TR2....A2
TR3....A3
TR4....B1
TR5....B1
TR6....B1
TR7....B1
TR8....B1
TR9....C2
TR10....B2
TR11....C2
TR12....C2
TR13....C2
TR14....B2
TR15....B2
TR16....B2
TR17....B2
TR18....C2
TR19....C2
TR20....C2
TR21...B1
TR22...B1
TR23...B2
TR24...A3
TR25...A3
TR26...B3
TR27...C3
TR28...C3
TR29...C1
TR30...C1
TR31...C1
TR32...C1
TR33...C1
TR34...C1
TR35...D2
TR36...D2
TR37...D2
TR38...D2
TR39...C2
TR40...C2

TERMINAL

P1....D2
P2....D3
P3....D3
P4....B1
P5....B1
P6....A2
J1....D2
J2....B2
J3....D2

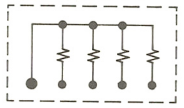

E C B
2SD1302
S G D
2SK246

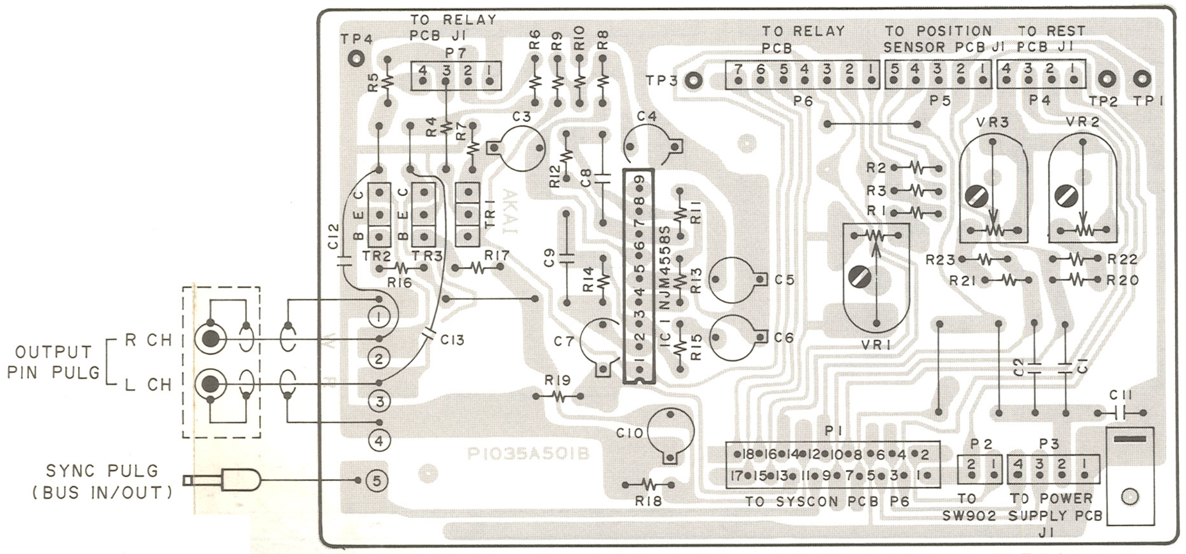
TR1-----2SK246(Y,GR)
TR2,3----2SD1302(R,S)

VR1-----TRACKING SENSOR VOLTAGE
VR2,3----POSITION SENSOR SENS

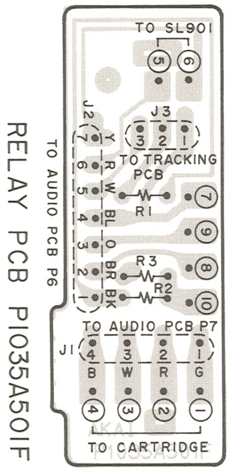
TR1,3 to 6,10,14 to 17,19,
  23,27,28,30,32,34 to 38...2SC1815(Y,GR)
TR2,9,11,20,26.............2SA1015(O,Y)
TR7,21,25,29...............2SC3242A(E,F)
TR8,22,24..................2SA1282A(E,F)
TR12,13,31,33,39,40........2SD1302(R,S)
TR18.......................2SK246(Y,GR)

SR1:22k x4



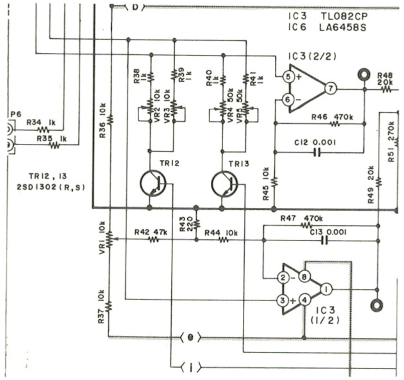
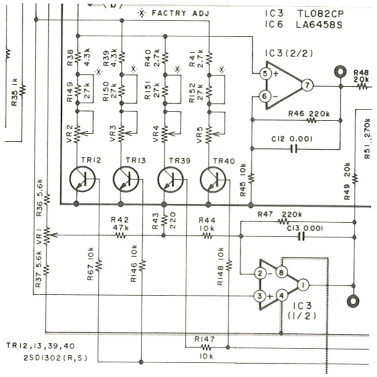

OUTPUT PIN PULG
R CH
L CH
SYNC PULG (BUS IN/OUT)
TP4
TO RELAY PCB J1
P7
TO RELAY PCB
TO POSITION SENSOR PCB J1
TO REST PCB J1
P6
P5
P4
TP3
TP2
TP1
VR3
VR2
VR1
IC1 NJM4558S
AKAI
P1035A501B
P1
P2
P3
TO SYSCON PCB P6
TO SW902
TO POWER SUPPLY PCB J1

AUDIO PCB P1035A501B


TO SL901
J3
TO TRACKING PCB
J2
TO AUDIO PCB P6
TO PH1
TO AUDIO PCB P7
J1
TO CARTRIDGE

RELAY PCB P1035A501F

AP-M77 HISTORY OF PC BOARD

		Changed from June 1984	Changed from July 1984
AUDIO PCB	P1035A501B	P1035A501B (4ED)	
	R20 = 2.2kΩ →	820Ω	
	R21 = 2.2kΩ →	820Ω	
		R22 = 10kΩ (ADD)	
		R23 = 10kΩ (ADD)	
	VR2 = 5kB →	10kB →	20kB
	VR3 = 5kB →	10kB →	20kB
RELAY PCB	P1035A501F	P1035A501F (4ED) R3 = 3kΩ (ADD)	
SYSCON PCB	P1035A501A →	P1035A501A (4ED)	
1	MUSIC INTERVAL SENSE CIRCUIT  →		
		R36 = 10kΩ →	5.6kΩ
		R37 = 10kΩ →	5.6kΩ
		R46 = 470kΩ →	220kΩ
		R47 = 470kΩ →	220kΩ
2	MICOM IC IC7 = P1035 →	P1035A (AS-0111)	
3	R143 = 270Ω →	150Ω	
	R144 = 270Ω →	150Ω	

IC3 TL082CP
IC6 LA6458S
IC3(2/2)
IC3 (1/2)
TR12
TR13
TR12, 13 2SD1302(R,S)
R46 470k
R47 470k
C12 0.001
C13 0.001
R48 20k
R49 20k
R51 270k
FACTRY ADJ
TR39
TR40
TR12,13,39,40 2SD1302(R,S)
R46 220k
R47 220k
R147 10k